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## **(54) PHOTOGRAPHIC PROCESSING METHOD AND PHOTOGRAPHIC PROCESSING DEVICE**

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a technique which enables an operator to check beforehand in any way front print data such as the date of photography is superposed in what position of photographic images and is outputted on a monitor. SOLUTION: This photographic processing device has an image processing means 45 which processes the photographic images read from input media recorded with the photographic images and displays the same on the monitor 44 and an output means which outputs the output data obtained by synthesizing the front print data to the prescribed position of the photographic images to output media. The image processing means 45 forms the images corresponding to the output data obtained by synthesizing the photographic images and the front print data and displays the images on the monitor 44.

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## **CLAIMS**

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[Claim(s)]

[Claim 1] While processing a photograph read in an input medium with which a photograph was recorded with an image processing device and displaying it on a monitor in a photographic processing method which outputs output data produced by compounding with front printing data inputted separately to an output media, a photographic processing method generating an image picture corresponding to output data which compounds said photograph and said front printing data and displaying this image picture on said monitor.

[Claim 2] An image processing means which processes a photograph read in an input medium with which a photograph was recorded and is displayed on a monitor. An output means which outputs output data produced by compounding front printing data

inputted separately to a position of said photograph to an output media.  
It is the photographic processing device provided with the above and said image processing means generates an image picture corresponding to output data which compounds said photograph and said front printing data and is characterized by being an image processing means which displays this image picture on said monitor.

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## DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the photographic-processing art provided with the function which compounds front printing data such as the date to the photograph recorded on input media such as a photographic film and is outputted to it at output media such as photographic paper.

[0002]

[Description of the Prior Art] When printing the photograph recorded for example on input media such as a photographic film from before on the photographic paper as an output media When the front printing data of time or a date in which the photograph was photoed are recorded on said input medium photographic-processing service which reads said front printing data and is printed [ photograph ] with a photograph is offered. For example since the information on a photographing date is recordable on an APS film on the occasion of the baking printing the front printing data of a photographing date with a photograph is performed. The baking mechanism for front prints by the front printing data of the photographing date printed at this time making predetermined LED emit light one by one putting in order LED of seven segments and two or more LED in series and moving photographic paper for example is used. Although the photograph can check the photograph read in the medium in photographic-processing service on the screen of a monitor in a process in such composition in the middle of image processing until it can be printed on photographic paper etc. It was not able to be checked a priori by monitor how a photograph and front printing data would actually be compounded and printed. It was not able to be checked a priori by monitor whether also in the case of the photographic processing device [ provided with the function to set up beforehand the position on which front printing data are printed ] it would be compounded by which portion of a photograph and would actually be printed.

[0003]

[Problem(s) to be Solved by the Invention] Thus since it was not able to check on the way how a photograph and front printing data would actually be constituted and would be printed in the process When actually printed there was a problem that the front print of the photographing time is carried out instead of the photoed date or it was printed on the important portion of a photograph after the front print has lapped. In such a case when redone there was a problem that a print loss occurred. In order not to generate such a print loss the time and effort of checking the contents of the front printing data set up is required. In the case where rotate a photograph and it prints especially etc. it needed to reconfirm that the position of a front print became where when it is made to rotate etc.

with reference to specifications and an operation manual etc.

[0004] This invention is made for the purpose of providing the art in which it can be checked a priori by monitor to which position of a photograph front printing data such as a photographing data are piled up and outputted how in order to solve the above technical problems.

[0005]

[Means for Solving the Problem] While a photograph read in an input medium with which a photograph was recorded is processed with an image processing device and a photographic processing method of claim 1 of this invention displays it on a monitor. In a photographic processing method which outputs output data produced by compounding with front printing data inputted separately to an output media. An image picture corresponding to output data which compounds said photograph and said front printing data is generated and it is characterized by displaying this image picture on said monitor.

[0006] And an image processing means which a photographic processing device of claim 2 processes a photograph read in an input medium with which a photograph was recorded and is displayed on a monitor. In a photographic processing device provided with an output means which outputs output data produced by compounding front printing data inputted separately to a position of said photograph to an output media. Said image processing means generates an image picture corresponding to output data which compounds said photograph and said front printing data and is characterized by being an image processing means which displays this image picture on said monitor.

[0007]

[Embodiment of the Invention] Drawing 1 is a lineblock diagram of an example of the photographic processing device concerning this invention. The scanner part 1 which reads image data in each top of the photographic film with which this photographic processing device A was separately developed with the film developer (not shown) developed negatives. Based on the read image data it comprises the baking section 2 which prints the set-up printing data on photographic paper, the developing section 3 which develops and discharges the photographic paper in which the picture was printed and the image processing portion 4.

[0008] By the scanner part's 1 being an input means which inputs image data from the photographic film as an input medium and setting the photographic film developed negatives to the scanner unit 11. The photographic film held at the film mask of the scanner unit 11 is irradiated with the light from the light source unit 12. The picture of each top is read one by one and it outputs to the image processing portion 4. According to the form of the film to process, for example, 135 films, 240 films (what is called an APS film) etc. said film mask is exchanged for the film mask of a suitable structure and is processed. In processing an APS film, the magnetic data reading machine 13 allocated by the film mask for APS films reads the front printing data as attached data by which magnetic recording was carried out corresponding to each top of a photographic film and outputs them to the image processing portion 4. When front printing data are not recorded or when reading is impossible, the data made to have no front printing data is outputted. Below taking the case of the case where an APS film is mainly processed, it explains. The case of photographic films other than an APS film and even when it is judged that he has no front printing data, a keyboard etc. can be operated, desired front printing data can be created and a front print can also be presented.

[0009]The image processing portion 4 is provided with the following.

The image data and front printing data from the scanner part 1 are receivedimage processing is performedand it is the image data D1.

The image processing unit 45 which is an image processing means which creates the printing data D3 which consist of the front printing data D2and comprises a computer by which image processing software was installed.

The memory 46 which memorizes image data temporarily.

The full keyboard 42the mouse 43and the monitor 44.

Said monitor 44 is a displaying means which displays the image data processed by said image processing portion 4and has a function which carries out the list display of the image data of two or more tops like drawing 4or displays the image data of each top one by one individually like drawing 5 and drawing 6. Said memory 46 is equipped with the reading-and-writing device of various exchangeable recording mediasuch as a hard disk drivea flexible magnetic diskCD-ROMMOZIPin addition to semiconductor memory. It can be used as an output media which replaces these recording media with the input medium which replaces a photographic filmor photographic paper. In this caseit becomes the composition that the reading-and-writing device of these storages is equivalent to an input means and an output means.

[0010]Said baking section 2 is an output means which prints the printing data D3 created by the image processing portion 4 on the photographic paper P as an output mediaFor examplethe photographic paper P supplied from either of the two paper magazines 21a and 21b is cut into predetermined length by the cutter 22and the cut photographic paper P is conveyed to the exposure mechanism 23. In the exposure mechanism 23line exposure of the inputted printing data D3 is carried out at the photographic paper P conveyed at a time by the conveyer style 25 of one line using the exposure unit 24. Thusthe photographic paper P in which printing data were printed is sent to the developing section 3and a development is carried out. In the developing section 3in the development unit 31sequential operation is carried outnegatives are developed with a predetermined drug solutionit is made to dry in the drying unit 32and the exposed photographic paper P is finished behindand is discharged as a print.

[0011]In the block diagram of drawing 2after the image data read in the scanner unit 11 of the scanner part 1 is once saved in the memory 46 of the image processing portion 4 and image processing is suitably carried out in the image processing unit 45it is outputted to the baking section 2 as printing data. In said image processing unit 45image processing is carried out according to the information inputted from a predetermined processing program and the full keyboard 42. And the image data by which image processing was carried out is displayed on the monitor 44 at any time. In said baking section 2the printing data outputted from the image processing portion 4 are inputted into the exposing treatment unit 26are changed into exposure dataand are outputted to the exposure mechanism 23 according to operation of the exposure part keyboard 27 mentioned laterfor exampleoperation of pressing the "start key." In the exposure mechanism 23the exposure data for line exposure is generated based on said printing dataand it is outputted to the exposure unit 24.

[0012]And in the exposure unit 24line exposure is carried out using the laser exposure mechanism which consists of a laser light source which is not illustrated on the photographic paper P conveyed one by one at a time by the conveyer style 25 of one line

of drawing 1 a polygon mirror etc. Said exposing treatment unit 26 synchronizes the conveying timing of said conveyer style 25 and the timing of line exposure of the exposure unit 24 and is controlled. Thus printing data are printed on the photographic paper P. It has the small exposure part monitor 28 by which the information according to the process of exposing treatment is displayed and the small exposure part keyboard 27 for giving directions required for the process of exposing treatment.

[0013] Based on the line block diagram of drawing 1 the block diagram of drawing 2 and the flow chart of drawing 3 the processing in the scanner part 1 the image processing portion 4 and the baking section 2 is explained in more detail. First in Step S1 an operator sets the negative mask for APS to the scanner unit 11 in Step S2 when judging whether it is processing an APS film from now on and processing an APS film. And the conditions of the size exposure position etc. of the color and character of a front print choose the print channel for APS film processing set up beforehand and set to the negative mask for said APS the APS film which it is going to process from now on.

[0014] In Step S3 the APS film set to the scanner unit 11 is scanned automatically and the image data D1 and magnetic data of each top are read. The image data D1 is read with the optical sensors formed in the scanner unit 11 and reads magnetic data with the magnetic data reading machine 13 formed in the scanner unit 11. These read data is inputted into the image processing portion 4. In step S4 it confirms whether magnetic data was able to be read in Step S3 when magnetic data is not able to be recorded or it is not able to read it progresses to Step S8 and only image data is displayed.

[0015] In Step S5 it confirms whether the front printing data D2 are in the read magnetic data when there is nothing it progresses to Step S8 and only the image data D1 is displayed. When it is it progresses to Step S6. If it confirms whether be setting out which compounds the read front printing data D2 with the image data D1 of the top concerned and displays the compounded image in Step S6 and has become simple setting out it will progress to Step S8 and only image data will be displayed. If it is setting out to compound it will progress to Step S7. In Step S7 the image picture of the front printing data D2 is compounded with the image data D1 of a top and the picture for displaying on the monitor 44 is generated.

[0016] In Step S8 the image data which a top accepts image data D1 or by which the image picture of the front printing data D2 was compounded is displayed. In the image processing portion 4 it is good to once memorize the image picture of the image data D1 and the front printing data D2 in the memory and to display the coarse image data for value monitors generated from said image data D1 on the monitor 44. In this monitor 44 as shown in drawing 4 every six tops image data is displayed. And the image data displayed in here is image data in the state where processing which includes automatic picture amendment beforehand was performed and can also display only the image data of a specific top on a screen like drawing 5.

[0017] In step S9 if it confirms whether the operator performed key operation (for example operation of pressing the F1 key of the full keyboard 42) for rotating the image data displayed on the monitor 44 and key operation is performed in the case of a picture sideways [ like drawing 5 ] it will progress to Step S10. In Step S10 only the image data D1 makes it rotate and it displays and the image picture of the front print D2 is displayed after only the image data D1 made it rotate 90 degrees and has stood erect like drawing 6 without making it rotate. Thus even if it rotates the image data D1 the image

picture of the front printing data D2 is displayed oblong without making it rotate.

[0018] In Step S11 an operator checks the displayed image data. If there is the necessity for picture amendment, an exclusive keyboard (not shown) will be operated and a correcting content will be changed, and if the display position, the size, the color, etc. of the image picture of the front printing data D2 are inconvenient, mouse 43 grade will be operated and it will change into desired position, size, color, etc. It is also possible to operate the full keyboard 42 and to edit the contents of the front printing data D2. As contents of front printing data, identification data, such as the contents of image processing data, such as the contents of picture amendment and the original image data and an order content, message alphabetic data, etc. can be included in everything but photographing date data. And if it is [ image data and front printing data ] it is less necessary to be amended, the "start key" will be pressed, for example, the contents of picture amendment, the position of the front printing data D2, etc. will be determined, and the exposing treatment in the baking section 2 after Step S12 will be made to start. In said image processing portion 4, the image data D1 amended based on said determined correcting content and said determined image picture of the front printing data D2 are compounded, and it is outputted to said baking section 2 as the printing data D3. Said exclusive keyboard is embedded in the crevice established in the upper surface of the console 14 and is arranged so that it may not become an obstacle at the time of installation of the full keyboard 42.

[0019] In Step S12, a part for the length specified from the specified paper magazine (21a, 21b) is pulled out, the cutter 22 cuts in Step S13, and the photographic paper cut in Step S14 is set to an exposure start position. In Step S15, in the baking section 2, the exposure unit 24 and the conveyer style 25 are controlled, the printing data D3 are exposed by a dot unit, and photographic paper is sent to the developing section 3. In Step S16, in the development unit 31 of the developing section 3, the development of the exposed photographic paper is carried out, it is dried in the drying unit 32 with a predetermined drug solution, and it is finished in Step S17 and discharges as a print. Thus, on the obtained result print. Since it was made to rotate 90 degrees and the camera was photoed, also when it becomes width and is reflected like drawing 5 on the film, since the contents of Hitoshi Monju of the front printing data D2 and direction of the picture based on the image data D1 are the same direction like drawing 6a, a legible print is obtained. D1 is an image picture corresponding to the image data D1, D2 is an image picture corresponding to the front printing data D2, and D3 is an image picture corresponding to the printing data D3 in drawing 4 and 5 and 6.

[0020] Thus, since the position of a front print, a size or a color, etc. was changed looking at the monitor 44, it became possible to display a front print on the position which does not become the obstacle of a picture in the size which is a color which does not become obstructive and does not become obstructive. As an image picture displayed on the monitor 44 corresponding to the front printing data D2, in order to make image processing easy, the pattern of the white of a size according to the contents of the front print may be sufficient, but it may be made to display the contents of Hitoshi Monju of the front print actually outputted.

[0021] As a method of digital exposure used for the exposure unit 24, the thing of a PLZT shutter system, a fluorescence beam method, and a liquid crystal shutter method other than the laser exposure method mentioned above may be used. Not only a photographic film but a network, a magnetic storage medium, an optical storage medium, or an optical

magnetic storage medium may be sufficient as an input medium. Not only photographic paper but a network magnetic storage medium an optical storage medium or an optical magnetic storage medium may be sufficient also as an output media.

[0022]

[Effect of the Invention] Since the front printing data outputted to an output media with image data are displayed on a monitor and it enabled it to check the position and size according to the photographic processing method of claim 1 of this invention A result image can be checked even if it does not actually output to output media such as photographic paper. Therefore the work of the check of setting out a check of a manual etc. about a front print becomes unnecessary and quick work is attained. Since it can be checked whether the front print has lapped with the important portion of a picture without actually outputting to an output media the loss of an output media etc. can be prevented. According to the invention of claim 2 the photographic processing device with which the above-mentioned effect is acquired can be provided.

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## DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] It is a line block diagram of the photographic processing device of this invention.

[Drawing 2] It is a block diagram of the important section of said photographic processing device.

[Drawing 3] It is the flow chart which showed the procedure in said photographic processing device.

[Drawing 4] It is a figure showing the display example of the monitor in said photographic processing device.

[Drawing 5] It is a figure showing the display example of the monitor in said photographic processing device.

[Drawing 6] It is a figure showing the display example of the monitor in said photographic processing device.

[Description of Notations]

1 Scanner part

11 Scanner unit

13 Magnetic data reading machine

2 Baking section

21a and 21b Paper magazine

22 Cutter

23 An exposure mechanism an output means

24 Exposure unit

25 Conveyer style

26 Exposing treatment unit

3 Developing section

4 Image processing portion

42 Full keyboard

44 Monitor

45 Image processing unit

46 Memory

D1 image data

D2 Front printing data

D3 Printing data

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